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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,449	07/13/2000	Hideomi Suzawa	SEL 194	4023

7590 01/02/2004

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EXAMINER
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TRINH, HOA B

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

g/m

<b>Office Action Summary</b>	<b>Application No.</b> 09/615,449	<b>Applicant(s)</b> SUZAWA ET AL.	
	<b>Examiner</b> Vikki H Trinh	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-15 and 41-102 is/are pending in the application.
- 4a) Of the above claim(s) 12-15, 41, 42 and 55-78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-54 and 79-102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1203</u> | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 43-45, 49-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Balasubramanyam et al. (5,923,999).

As to claims 43, 49, Balasubramanyam et al. (5,923,999) discloses a semiconductor device having a semiconductor layer gate oxide layer 18 over a substrate 11; and a gate electrode 22, 24 adjacent to the gate oxide 18 with a gate insulating layer 20 interposed therebetween, wherein the gate electrode has a first conductive layer 22 comprising a tungsten/ nitride and a second conductive layer 24 comprising a tungsten on the first conductive layer; wherein the lower surface of the first conductive layer 22 is in contact with the gate insulating layer 20 (See figure 8). See figures 8 and 13-14.

As to claims 44, 50, the electrode is located over the semiconductor layer. See figure 13.

As to claims 45, 51, because electrical resistivity of tungsten material is the same, it is inherent that Balasubramanyam et al. (5,923,999) meets the claim's limitation. See figure 14.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 46-48, 52-54, 79-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balasubramanyam et al. (5,923,999) in view of Seo et al. (5,825,437)

Balasubramanyam et al. (5,923,999) discloses the invention substantially as claimed. However, Balasubramanyam et al. (5,923,999) does not teach the semiconductor device is an active matrix LCD device.

Seo et al. (5,825,437) discloses a semiconductor device with a gate electrode having a first conductive layer 2b and a second conductive layer 3b over a substrate 1, wherein the semiconductor device is liquid crystal display device for picture elements. The first conductive layer 2b of the gate electrode has tapered cross section. See figure 11 and column 1, lines 9-20.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the invention of Balasubramanyam et al. (5,923,999) for the use in LCD area for picture elements or imagining, as taught by Seo et al. (5,825,437), for providing better structure with an enhanced gate structure. See col. 4, lines 40-50.

The courts have concluded that there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). Also, references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA 1969).

As to claims 79, 85, Seo et al. (5,825,437) discloses the first conductive layer 2b has tapered cross section. See figure 11.

As to claims 91, 97, Seo et al. (5,825,437) discloses the second conductive layer 3b having a thickness of 3000 angstrom which is equal to 300 nm. See col 8, line 54.

As to claim 96, 102, the device is a liquid crystal display device for picture elements. See col. 1, lines 9-20, of Seo et al..

#### ***Response to Amendment***

8. Applicant's arguments filed 09/25/03 have been fully considered but they are not persuasive.

Reference '999 discloses the first conductive layer 22 being in contact with the gate insulating layer 20 with respect to independent claims 43-45, 49-51. See Balasubramanyam et al. (5,923,999) , fig. 8. And reference '437 cures the deficiency of Reference '999 for the remaining of the present claims. Therefore, the combined teaching of the references teaches each and every elements of the claims in the present invention.

#### **Conclusion**

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

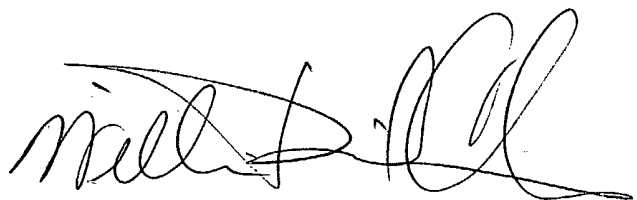
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (703) 308-8238. The Examiner can normally be reached Mon-Tuesday, Thurs-Friday, 7:30 AM - 6:00 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (703) 308-4918. General inquiries relating to the status of this application should be directed to the Group receptionist at (703) 308-0858. The fax number is (703) 308-2708.

Vikki Trinh,  
Patent Examiner  
AU 2814

A handwritten signature in black ink, appearing to read 'W. David Coleman', with a stylized flourish at the end.

**W. David Coleman**  
**Primary Examiner**